ORGANIC AGRICULTURE AND "SAFE" VEGETABLES IN VIETNAM: IMPLICATIONS FOR AGRO-FOOD SYSTEM SUSTAINABILITY

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Organic agriculture is often promoted as a possible route for farmers in the global south to follow in the quest for greater agricultural sustainability. By allowing farmers better access to the global markets for organic food, it is hoped that sustainable livelihoods will develop. But what happens when this approach is viewed through the lens of a low energy future? It is increasingly recognised that world energy supplies in the form of readily available oil and natural gas are very close to peaking and will soon start to decline. This poses a serious challenge to agricultural development activities that rely on these fuels. This challenge is explored in the context of Vietnam, a fast-growing country with heavily taxed natural resources and millions of smallholder farmers seeking to improve their livelihoods. This paper reports on field research and a review of secondary sources to assess the trends and prospects for organic agriculture to address agro-food system sustainability. As certified organic agriculture is only just emerging in Vietnam, the production of safe vegetables for the domestic market is also discussed. It is argued that organic agriculture in Vietnam is not centered on environmental concerns and is instead driven largely by the demand from export markets. There has been very little development of the domestic market for organic products in Vietnam despite the fact that there are strong concerns around food safety and food quality, particularly amongst urban consumers.

Introduction

The Vietnamese economy has been through a period of strong growth following economic reforms in the late 1980s. These reforms put production decisions back in the hands of farmers and gave them the opportunity to produce directly for market (Luong 2003; Quinn-Judge 2006). As a result, the use of agrochemicals has increased substantially since the early 1990s (Do 2005; FAOSTAT 2004). The increased use and misuse of pesticides is particularly worrying for human and environmental health. A study by Nguyen and Tran (1997) found that farmers in the Mekong Delta overuse pesticides, including several products that have either been banned or restricted because of their toxicity. Further, it was found that even if farmers can read the pesticide labels, they do not always follow the instructions or use protective clothing, resulting in pesticide exposure and poisonings. It has also been found that poorer farmers apply lesser amounts of pesticides than better-off farmers, but they use more toxic pesticides (Meisner 2003).

In the mid 1990s there were a number of food safety scares resulting from inappropriate pesticide use and the Vietnamese Government were forced to act (Phan et al. 2005). In April 1998 the Ministry of Agriculture and Rural Development (MARD) issued the

"Temporary Regulations for the Production of Safe Vegetables"[1]. These regulations specify the required quality for safe vegetables and contain a number of tables showing the Maximum Residual Levels (MRLs) for permitted pesticides, nitrate content, heavy metal content and bacterial pathogens and intestinal parasites that are allowed in harvested vegetables. Vegetable farmers across Vietnam, particularly those around the major cities of Hanoi and Ho Chi Minh City received training on safe vegetable production and integrated pest management (IPM) in an attempt to reduce pesticide residues in vegetables and improve food safety. The protection of human health appears to be the primary driver behind safe vegetable production.

Also emerging in the late 1990s in Vietnam were a small number of organic agriculture initiatives, primarily involving the production of specialty crops, such as spices and essential oils, destined for export to Europe. Organic agriculture is often promoted as a possible route for farmers in the global south to follow in the quest for greater agricultural sustainability (Johannsen et al. 2005). By allowing farmers better access to the global markets for organic food, it is hoped that sustainable livelihoods will develop. But what happens when an export oriented approach to agricultural development is viewed through the lens of a low energy future? It is increasingly recognised that world energy supplies in the form of readily available oil and natural gas are very close to peaking and will soon start to decline (Deffeyes 2005; Heinberg 2005; Homer-Dixon 2006). This poses a serious challenge to agricultural development activities that rely on these fuels, either directly for farm inputs in the case of conventional agriculture or indirectly for the transportation of produce to distant markets.

This paper draws on a literature review and interviews with some of the main actors working in Vietnam to assess the trends and prospects for organic agriculture to address agro-food system sustainability. We argue that organic agriculture, as currently manifest in Vietnam, is not centered on environmental concerns and is instead being driven largely by the demand from export markets that promise good economic returns for investors. There has been very little development of the domestic market for organic products in Vietnam despite the fact that there are strong concerns around food safety and food quality, particularly amongst urban consumers. This paper begins with a review of the status of organic agriculture in Vietnam. Three short case studies are then presented to highlight some of the trends in organic agriculture in Vietnam, particularly those initiatives that are leaning towards production for the domestic market. The paper then concludes with some thoughts about further developing the domestic market for organic agriculture and safe foods in Vietnam.

Organic agriculture in Vietnam

There is currently only a very sparse amount of information available on organic agriculture in Vietnam and the topic has received little attention in the academic literature. Papers by Camillo (2004) and Moustier et al. (2006) are some of the exceptions. As of January 2008, the FAO website devoted to organic agriculture in Vietnam had only one article listed, a news report relating to brown plant hoppers in the Mekong Delta with no direct reference to organic agriculture (FAO 2008). No other information was listed concerning organic agriculture in Vietnam. Similarly on the

[1] These temporary regulations have subsequently been finalized and were released in January 2007 as the "Regulations for the Management and Certification of Safe Vegetable Production".

IFOAM website, the Organic Directory Online lists only two entries for Vietnam. One of these listings is for an international development organization, which has recently ceased activities in Vietnam and the other listing has no contact information available (IFOAM 2008). However, when one begins to search online, reference to organic agriculture can be found in the grey literature such as project reports, newspaper articles and company websites. In this section, information from an extensive literature search is collated with data from key informant interviews to paint a picture of the current status of ecological and organic agriculture in Vietnam.

If conceived in the broadest sense, there are three main types of organic farmers in Vietnam. We have named these the traditional organic farmers, the reformed organic farmers and the certified organic farmers. Although it is difficult to get a good estimate of the number of organic farmers in Vietnam, it is safe to say that each of these groups contains a numerically small number of farmers when compared to the vast majority of conventional farmers in Vietnam. An overview of these three groups can be found in Table 1. These groups of farmers are discussed in greater detail below.

The first group of ‘organic’ farmers are those who have never embraced the use of agrochemicals in their production systems and continue to farm using traditional methods, including composting and crop rotations to maintain soil fertility and guard against pests and diseases. In practice these farmers are probably few in number today and are most likely to be found in the mountainous areas of central and northern Vietnam among the ethnic minorities. These farmers most likely use little or no agrochemical inputs because of limited access to them, either through distance from markets or the relatively high cost to purchase, rather than an organic philosophy that shuns the use of agrochemicals for health or environmental reasons. The vast majority of rice growing farmers in the lowlands of Vietnam would also be found to be using at least some chemical fertilizer inputs in an attempt to boost production. If their use of inputs is lower than the average, this is again likely due to economic constraints or an attempt to reduce costs rather than health of environmental concerns.

The second group of ‘organic’ farmers are those that at some point embraced the use of agrochemicals on their farms but have now shifted away from their use after learning about the negative economic, health and environmental impacts associated with the excessive use of agrochemicals through a training course or some other avenue. Along with the government supported training courses on integrated pest management and safe vegetables, there are a handful of non-government organizations working in Vietnam who explicitly promote ecological farming practices and advocate for farmers to adopt a more organic production approach by reducing or eliminating their use of agrochemicals. An overview of these initiatives can be found in Table 2.

Most of the training courses on IPM and safe vegetable production do not strictly rule out the use of agrochemicals, but rather attempt to teach farmers about the safe and appropriate use of agrochemicals. They also demonstrate the economic irrationality of using excessive amounts of chemical fertilizers. When it comes to applying chemical fertilizer, more is not always better and when applied past an optimum amount, farmers are throwing away their money. These courses also often contain components on ecological farming practices, such as composting, crop diversity and crop rotations.

As farmers experiment with these ecological farming practices and gain more experience some of them may eventually abandon the use of agrochemicals altogether. We are not claiming that this will happen with every farmer that attends an IPM course, but there are bound to be a number of farmers that do stop using agrochemicals after learning about and experimenting with ecological farming principles and practices on their farms. This was certainly the case with a small number of the safe vegetable farmers interviewed in Cu Chi District by the primary author. These farmers had replaced all chemical fertilizer inputs with composted livestock manure and were using only a small amount of biopesticide sprays such as *Bacillus thurengiensis* (Bt) for crop protection. These biopesticides are allowed for use in organic production in emergency situations. While these farmers were not aware that they were 'organic' farmers, and certainly had not sought any form of organic certification, they would likely be able to gain certified organic status with a few very minor adjustments to their current practices.

The third group of organic farmers are those that are certified as organic producers, or they are in the process of becoming certified. An overview of the certified organic agriculture initiatives in Vietnam can be found in Table 3. These organic initiatives are being developed through a variety of different means and involve a variety of different commodity groups. A few of these projects are being promoted by development organizations, while private trading companies are the driving force behind the rest. The main organic products in Vietnam are spices such as cinnamon, star anise and pepper, fruit, cashews, tea and some vegetables. Organic aquaculture, particularly shrimp farming, is also an important part of the organic industry in Vietnam (Willer and Yussefi 2006).

Vietnam is among the top producers of coffee and rice in the world, but it appears that very little of the production of either of these crops is organically certified. About 20,000 tons of organic coffee is produced worldwide per year, representing about 1.5 percent of the total coffee production (Willer and Yussefi 2006). "In Asia, according to the last organic coffee conference held in Uganda in 2004, East Timor is the largest producer, with 9,000 metric tons of organic green coffee, although it only sells 2000 tons as organic. Unfortunately, data on organic certified land area was not available for this country or for other important countries like Vietnam or Papua New Guinea" (Willer and Yussefi 2006: 57). There is also very little information available on organic rice farming in Vietnam, although reference is made to it in a number of websites and news articles (Finkel 2006; Vien Phu 2003; Viet Nam News 2003).

Certified organic farming is a fairly recent phenomenon in Vietnam. Around 10 years ago a small number of foreign companies started working with local companies and farmers to grow organic crops for export (den Braber and Hoang 2007). Today, around 90 percent of the organic production is destined for export, mainly to Europe and the USA. The local market for organic vegetables is very underdeveloped, with only small amounts of organic vegetables and tea being sold mostly to foreigners or wealthy Vietnamese in Hanoi and Ho Chi Minh City and various five star resorts and restaurants around the country. There is also some confusion in Vietnam as to the difference between clean, safe and organic vegetables, with the former being routinely confused for the latter in the Vietnamese press (Viet Nam News 2006b; Viet Nam News 2007a).

The 2006 IFOAM report on trends in world organic agriculture list Vietnam as having 1,022 farms with an area of 6,475 ha of land certified or in transition (Willer and Yussefi

2006). These farms represent only 0.07 percent of the total agricultural area of Vietnam. It must be noted that these figures are based on a survey from 2001. These figures are repeated in the 2007 IFOAM report, suggesting that little has changed in Vietnam in terms of organic agriculture projects. However, according to Koen den Braber, an advisor with the ADDA organic agriculture project and formerly involved with Hanoi Organics and the Ecolink Tea Company, there are probably and additional 6,000-7,000 ha of land under organic management that has not been included in the IFOAM report (den Braber and Hoang 2007). The 2007 IFOAM does list one additional project involving wild harvesting in Vietnam, covering a area of 44 ha (Willer and Yussefi 2007). The commodity being harvested is not mentioned in the report. Interest in organic agriculture is growing, with a number of potential projects on organic cacao and organic bitter tea being discussed by development organizations.

Organic agriculture in Vietnam: Three case studies

In this section three short case studies are presented to highlight some of the ecological agriculture and organic initiatives presented in the tables above. The cases presented are: (1) safe vegetable farmers in Cu Chi District, Ho Chi Minh City who have exceeded the requirements for safe vegetable production and have eliminated the use of agrochemicals in their farming systems altogether; (2) the organic agriculture program by Agricultural Development Denmark Asia (ADDA); and (3) the vegetable farm run by Organik Dalat. These cases are chosen because they represent a range of ecological and organic agriculture initiatives in Vietnam, including Vietnamese Government supported IPM projects, an organic farming project supported by an NGO and a private company producing vegetables for both the domestic and export markets.

Safe vegetable farmers in Cu Chi District, Ho Chi Minh City

Within the administrative boundaries of Ho Chi Minh City (HCMC), slightly less than 80,000 ha of land are used for agriculture. Around 50,000 ha are used for growing rice and the remainder is used for crop and livestock production, including vegetable production to feed the urban population. Rice production in HCMC has very low yields due to poor soils and land prices are increasing due to urbanization and industrialization occurring around the city. In response to these pressures, there has been a push from the People's Committee of HCMC and the Department of Agriculture and Rural Development (DARD) for farmers to diversify from rice into higher value products such as safe vegetables, horticulture and small-livestock production. The main alternative approach that has been taken up by farmers is safe vegetable farming, which is currently practiced on just over 3,000 ha. The HCMC Government is aiming to increase the area of safe vegetable sin HCMC to 5,700 ha by 2010 (People's Committee of HCMC 2006).

There are a number of reasons why the production of safe vegetables is promoted. Firstly, the standard of living has increased in HCMC and people are becoming more concerned about their health. There were a large number of food poisoning cases in Vietnam throughout the 1990s and consumers became concerned about the quality and safety of their food, particularly vegetables (Luis and Firmino 2007; Moustier et al. 2006). For example, Phan et al. (2005: 5) report that in 1995 there were 13,000 cases of food poisoning in the Mekong Delta alone, resulting in 354 deaths. Secondly, through training courses and mass media campaigns, farmers have also become more aware of the negative health effects that can result from the misuse of pesticides and are looking for

alternatives. In response, and following the lead of the national government which issued temporary regulations on safe vegetable production in 1998, the HCMC Government have initiated training programs on IPM and safe vegetable growing for farmers, implemented through the Agricultural Extension Centre and the Plant Protection Sub-Department of DARD.

One of the focal points for safe vegetable production in HCMC is Cu Chi District. Cu Chi is the second largest district in HCMC and is located along highway 22 in the north-western corner of the city, about 25 km from the downtown core. Research was conducted with 40 safe vegetable farmers in two communes in Cu Chi District from May-August 2007. While the requirements for safe vegetable production are not nearly as stringent as organic production and chemical fertilizers along with some low toxicity pesticides are allowed, it became clear during the course of this research that a small number of farmers had if fact exceeded the requirements for safe vegetable production and eliminated the use of agrochemicals in their production systems.

One such example was a farming couple from Tan Phu Trung Commune who had eliminated the use of chemical fertilizers on their crops after receiving three months of training on safe vegetable production and IPM. This husband and wife team in their early fifties are professional farmers, with 90 percent of the family income from their farming operation growing leaf vegetables on 0.1 ha and raising cattle on another 0.45 ha. One of their sons also sends them some income from his job as a truck driver. When asked to define safe vegetables, the husband responded that they are grown using clean water from a deep well, with only organic fertilizers for soil improvement and spraying only biopesticides for plant protection. He also mentioned that the correct isolation time between and spraying and harvesting of the crop must be observed. While these farmers were not aware of the concept of certified organic agriculture and would not identify themselves as being organic farmers, they nevertheless represent an important resource for moving the Vietnamese agriculture sector towards greater sustainability.

While only a very small number of safe vegetable farmers who had completely eliminated the use of agrochemicals were encountered during the course of this study, most of the safe vegetable farmers had reduced the application of chemicals fertilizers substantially, replacing these with composted livestock manure. There was also a strong trend towards using only biopesticides for crop protection. The use of highly dangerous pesticides in the organophosphate and carbamate groups had largely been stopped. While safe vegetable production is expressly not the same as organic vegetable production, it does signify an important trend in Vietnamese agriculture where food quality and food safety are considered important indicators, rather than a singular focus on the quantity of food produced. As a densely populated country with a large proportion of the population reliant on agriculture for their food security, ensuring an adequate food supply will always be an important issue in Vietnam. However, the emerging concern for food quality shows an important maturing of the Vietnamese agricultural sector after the widespread food shortages of the early 1980s.

Organic Agriculture Program by Agricultural Development Denmark Asia

In late 2004, Agricultural Development Denmark Asia (ADDA) and the Vietnamese National Farmers Union (VNFU) commenced a project to train farmers in organic agriculture and to develop the local market for organic crops. The pilot phase of the

project involves 117 farmers in six provinces across Northern Vietnam (approximately 20 farmers in each province). The project involves a number of different commodities, with vegetables in Bac Ninh, Vinh Phuc and Lao Cai Provinces, oranges in Tuyen Quang Province, litchis in Bac Giang Province and fish in Hai Phong Province. A farmer field school approach is used for training farmers. Training is run for half a day each week in a study field. Some of the specific challenges encountered are the small size of individual fields that are often scattered in various locations, making it difficult to protect the integrity of the organic fields. As much as possible blocks of fields are selected with all farmers in the area growing organically. There have also been some challenges finding enough animal manure for making compost, so other nutrient sources such as green manures are used.

Initially the plan was to obtain certification under the Vietnamese organic standards that have been in development since 2004. The Vietnamese Ministry of Agriculture and Rural Development have developed some organic standards for Vietnam but their status is unclear. The IFOAM report from 2007 lists Vietnam as being in the process of drafting organic regulations (Willer and Yussefi 2007: 58). Currently, the standards serve more as a guide to farmers and processors rather than a concrete tool for certification (IGCI 2007). The regulations do allow for private companies to issue organic certification for products destined for the domestic market, but since the domestic market is so small there are few companies willing to invest in organic certification. Rather than working directly to implement the Vietnamese organic standards, the focus of the project has shifted towards developing the capacity of farmers to produce organic crops in the hope that this will spur interest in organic food from consumers. The project will also explore export market opportunities, particularly to other countries in the region. Some interest exists from Europe for the Litchis so these may be exported with EU organic certification.

For most smallholder farmers in Asia, the cost of an external inspection to obtain organic certification would be prohibitive and so a process of group certification has been developed to help reduce the cost to individual farmers. These group certification systems involve an internal control system (ICS) for the group and a central body responsible for ensuring compliance to the organic standards and marketing the produce (van Elzakker and Rieks 2003). For the moment, the ADDA project is focussing on developing an internal control system for the farmers in each project area. This will facilitate the conversion to certified organic agriculture at a future date, as explained by den Braber and Hoang (2007: 19): “With an ICS in place, the external inspection process is then focussed on evaluating the operation of the ICS and the inspection of a sample of farms, not each individual farm”. The processing facilities are also inspected as part of the certification process. Group certification has also been used with farmers growing organic tea for the Ecolink company.

The vegetable farm of Organik Dalat

Dr Nguyen Ba Hung was born in the town of Dalat in the central highlands of Vietnam. Dr Hung has been involved in the agriculture sector since 1977 and is the founder of an organic vegetable production company called Organik Dalat. From 1989-1995 he lived in France while studying for his PhD in vegetable genetics. On completion of his studies he moved back to Vietnam to manage a number of agriculture projects before founding his own company in 1997. Initially the company bred vegetable seedlings for sale to other producers around Dalat. Then in 2003 they commenced production of vegetables on

rented land and exported lettuce to Taipei. In August 2005, Organik Dalat became the first farm in Vietnam to obtain EurepGAP certification, allowing them to export vegetables to Europe. The company is also in the process of obtaining organic certification from Naturland of Germany. From Dalat the vegetables are sent across Vietnam to five star hotels, restaurants, cruise ships and catering companies. Vegetables are also exported to Berlin in Germany. The company previously ran a vegetable box scheme for expatriate families in Ho Chi Minh City, but this was suspended temporarily while the company moved to a new farm.
In 2005 Dr Hung purchased 15 ha of land outside of Dalat and began full production of vegetables in October 2006. There are currently four ha of land under cultivation, including two ha under sealed net houses designed to keep insects out. There is also a double door system on the shadehouses to prevent entry from insects. Pheromone baits along with sticky yellow and blue cards are used to attract and trap any insect make it inside the net houses. There are a total of 35 workers employed in the company. Around 15 people work in the production of vegetables and another 17 work in the processing factory, with three managers in charge of production, processing and marketing. The company has modern packaging facilities that allow for vacuum cooling and packing of vegetables.

When setting up an organic farm in Vietnam, Dr Hung notes the importance of knowing the history of the land, particularly in relation to herbicides used during the war. His farm was created on an old coffee plantation, surrounded by pine forest and soil tests were conducted to make sure that no pesticide residues where present. The isolated nature of the farm helps to eliminate the risk of pesticide contamination from neighbouring farmers. Unfortunately this model is of limited relevance to other farmers living in the heavily populated areas of Vietnam with small dispersed areas of land. Dr Hung stressed the importance of creating groups of farmers from one area who are willing to work together on organic agriculture. Organik Dalat is working to obtain EurepGAP certification for seven other farmers around Dalat City. The company will then be able to package and sell their vegetables. Dr Hung stresses the importance of certification for ensuring the integrity of safe and organic foods in Vietnam.

Conclusions

There has been very little development of the domestic market for organic products in Vietnam despite the fact that there are strong concerns around food safety and food quality, particularly amongst urban consumers. In fact, the two companies that tried to introduce organic vegetables to consumers in Hanoi have ceased selling vegetables and now concentrate on the sale of biofertilizer, leaving Organik Dalat as the sole trader of organic vegetables in Vietnam. However, a new shop opening in Hanoi in January 2008 is planning to sell organic produce sourced from farmers involved in the organic agriculture project run by ADDA. Most of the focus in the domestic market has been placed on developing safe vegetables and training farmers in IPM techniques. While safe vegetables are not equivalent to organic vegetables, investigating the emergence of safe vegetable production is useful in gaining at least some understanding as to the challenges and opportunities that farmers might encounter in undertaking the more involved transition to certified organic production.

Preliminary evidence from interviews with safe vegetable farmers indicates that a small portion of them have actually surpassed the requirements for safe vegetable production.

With some further training and fine tuning of their production systems they would be eligible for organic certification. In the lowlands of Vietnam, where farm sizes are often small and the fields controlled by an individual farmer may be spread around in several locations, it will be a significant challenge to prevent cross-contamination from irrigation water and spray drift from neighbouring fields. Setting up groups of farmers to work together on organic production is one possible avenue for overcoming this challenge. These group certification systems can also help to reduce the costs of certification for individual farmers. There are a growing number of organizations and farmers in Vietnam with experience in implementing group certification and internal control systems.

Future development in the organic sector will likely continue to be driven by production for export, at least in the short to medium term. The Vietnamese Government is looking for ways to improve growth rates in the agriculture sector and the export of high quality products is one avenue being explored. In coming years the HCMC Government is planning to train more vegetable farmers on the application of EurepGAP standards (now known as GLOBALGAP) in an attempt to increase vegetable quality to the level required for export to Europe.

Despite potential of exports for driving growth in the agriculture sector, attention should also be given to developing the domestic market for safe and organic foods. In the case of safe vegetables this will require strengthening the system of testing and certification so that consumers gain confidence in the system. Given the confusion that currently exists around 'clean', 'safe' and 'organic' foods, public education campaigns are needed. Another important step will be to finalize the national standards on organic agriculture and put in place an effective system of certification. This task has been put on hold until sufficient demand is created in the domestic market to justify the expense. In the meantime, organic agriculture initiatives run development organizations and private entrepreneurs will continue to play an important role in building the capacity for organic production amongst farmers and creating domestic market demand.

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Tables

Table 1: Typology of Organic Farmers in Vietnam

Main Characteristics	Type One Traditional Organic	Type Two Reformed Organic	Type Three Certified Organic
Description	Traditional farmers who have never used agrochemicals on their farms.	Farmers who applied agrochemicals in the past but have stopped after receiving training on ecological farming methods.	Farmers who have received training on organic production methods and use only those inputs and practices allowed by an organic certifying body.
Rationale	Lack of access to agrochemicals. Concern for human or environmental health (?)	Concern for human or environmental health. Economic benefits from reducing input costs.	Concern for human and environmental health. Economic benefits from reducing input costs and from obtaining organic certification.
Organic Awareness	May or may not be aware of organic agriculture as a larger movement.	May or may not be aware of organic agriculture as a larger movement.	Aware of the principles of the organic agriculture movement.
Certification Status	No certification	No organic certification but may have safe vegetable or EurepGAP certification.	Certified organic or in processes of obtaining certification.
Number of Farmers	1,000s to 10,000s (?)	1,000s to 10,000s (?)	1,000-3,000

Table 2: Ecological Agriculture Initiatives in Vietnam

Organization	Description	Commodity Groups	Location of Projects	Number of Farmers
National IPM Program MARD and FAO Source: (FAO 2001)*	National IPM program has been running since 1992 with support from the FAO, Funding has variously been provided by the governments of Australia, Norway, Denmark and the EC. Training based on Farmer Field Schools (FFS). Many provincial agriculture departments are also training farmers in IPM and safe vegetable production.	Rice, Sweet Potatoes, Cotton, Peanuts, Soybeans, Sugarcane, Vegetables.	Country wide	Over 30,000 farmers from 1999-2001. Probably more than 500,000 farmers trained since1992.
IPM Program Danida Source: (Danida 2007)	Supporting the National IPM Program from 2000-2005. Training of farmer trainers and supporting FFS and Community IPM activities.	Rice and Maize	In 31 provinces across the country	3,500 farm trainers and 356,000 farmers trained on IPM
Vegetable IPM Agricultural Development Denmark Asia (ADDA) and Hanoi Farmers Union (HNFU) Source: (ADDA 2006)*	Providing training to farmers on implementing IPM in vegetables through the use of Farmer Field Schools (FFS). Participatory training method in which farmers select the topics of interest to them. Goal was to optimize the water and fertilizer management, reduce the use of pesticides and produce safer vegetables for consumers. The project ran from 1999-2005.	Vegetables	Northern Vietnam	Full season training of 9,000 vegetable farmers and formation of more than 100 farmer groups.
IPM Training CIDSE Source: (FAO 2001)	Project from 1999-2001 to spread IPM capability in tea. Project from 2002-2003 to improve farmer knowledge of IPM in field crops.	Tea, Rice, Maize, Soybeans, Tea and Potatoes	Tea in Thai Nguyen and Phu Tho Provinces. Other crops in Bac Kan Province	7,840 farmers
Citrus IPM National Institute of Plant Protection and ACIAR Source: (FAO 2001)	Season long field studies and development of FFS for IPM from 1997-2000. Reduce use of broad spectrum pesticides through introduction of petroleum spray oils	Citrus	Nghe An and Tien Giang Provinces	Unknown
Market Access for the Poor Netherlands Development Organization (SNV)	Promoting improved market access for the poor through the sustainable use of upland areas through agriculture, forestry and the collection of Non-Timber Forest Products (NTFPs).	Subsistence: Rice, Maize, and Small Livestock. Cash Crops: Mushrooms,	Son La, Dien Bien, Lai Chau, Thai Nguyen and Ninh Binh in North	Working with policy makers, farm trainers and service providers.

Source: (SNV 2008)*	Encourage responsible use of external inputs and promote IPM methods.	Bamboo Shoots, Cardamom, Tea, Longan and Flowers	Vietnam Quang Binh, Quang Tri and Hue in Central Vietnam	
Ecological Agriculture Japan International Volunteer Centre (JVC) Source: (JVC 2006)*	Introduce ecological and organic farming techniques to farmers. Emphasise the use of internal farm inputs, compost making and integrated farming technologies for promoting food security amongst ethnic minorities in the uplands. Projects include integrated rice-fish farming, rice-duck farming and the system of rice intensification (SRI).	Rice, Maize, Fruit, Vegetables, Livestock and Fish	Hoa Binh Province, Northern Vietnam	1,400 households
Ecological Agriculture Social Policy Ecology Research Institute (SPERI) Source: (SPERI 2007)*	Facilitates FFS for different upland areas and develops a network of farmers interested in sustainable agriculture and organic agriculture.	Crops, Fish and Livestock	Lao Cai, Nghe An, Ha Tinh, Quang Binh Provinces	Unknown
Les Vergers Du Mékong Private Company Source: (Les Vergers Du Mékong 2007)*	French coffee company that established fruit plantations and processing company in Vietnam in 2000. Orchards produce more than six millions tonnes of fruit per year. They do not use chemicals or additives in their products and ensure traceability but are not certified organic.	Fruit, Fruit Juices, Jams, Honey Coffee	Mekong Delta and Central Highlands	Unknown
Sustainable Development of Peri-urban Agriculture in South-East Asia (SUSPER) AVRDC and CIRAD Source: (Moustier 2007)	The SUSPER project ran from 2002-2006, with funding by the French Ministry of Foreign Affairs. Goal was to raise capacity of stakeholders involved in peri-urban agriculture by increasing sustainability and profitability. Market analysis and development and testing of technical innovations.	Vegetables, Fish and Frogs	Vegetables in Hanoi, Aquaculture in HCMC (activities also in Phnom Penh & Vientiane)	150 farmers in Hanoi, 100 farmers in HCMC
Markets and Agriculture Linkages for Cities in Asia (MALICA) Centre for Agrarian Systems Research	Consortium of French and Vietnamese Research Institutes. Main objective is to build the capacity of researchers, students, administrations and private groups in analysing food markets. Research focuses on	Rice, Fruit, Vegetables, Meat and Fish	Hanoi and HCMC	Primarily research activities

and Development (CASRAD) Source: (MALICA 2007)	local production and local market demand, food quality, food behaviour and risk perception amongst consumers.			
South and East Asian Rural Urban Synergy (SEARUSYN) The Agricultural Economics Research Institute (LEI) Source: (SEARUSYN 2006)	Main objective was to contribute to the synergy between urban growth and agricultural development in the urban fringe in order to improve the welfare of rural and urban communities. One component was to determine the key constraints and opportunities for environmentally sustainable agriculture.	Fruit and Vegetables	Hanoi in Vietnam and Nanjing in China	Primarily research activities from 2003-2006

* Information was also gathered through interviews.

Table 3: Certified Organic Agriculture Initiatives in Vietnam

Organization	Description	Commodity Groups	Location of Projects	Number of Farmers
Hanoi Organics Private Company Source: (Economy and Marketing Department 2003; Karkoviata 2001; Moustier et al. 2006)*	Hanoi Organics started selling boxed vegetables to expatriates in Hanoi in September 1999. Expanded to also sell to restaurants in 2001 and through their own retail shop. Certified by Organic Agricultural Certification Thailand, 2002 and 2003. Certification stopped due to financial difficulties in 2004. Company now only sells Biogrow biofertilizer.	Vegetables, Biofertilizer	Tu Liem District of Hanoi and Chuong My District of Ha Tay Province	Working with 6 farmers in Tu Liem and 32 farmers in Chuong My
Sapro Private Company Source: (Firmino 2007)*	Started selling boxed vegetables in 2004 (Owner is formerly of Hanoi Organics). At the peak they had about 100 customers in total (20-30 customers/week). Stopped selling vegetables about one year ago and now concentrate on landscape gardening services and sales of Biogrow biofertilizer.	Vegetables, Biofertilizer	Hanoi	Working with 10 farmers on 0.36 ha
Organik Dalat Private Company Source: (Nguyen Ba Hung 2007)*	Started with research on organic production and sale of vegetable seedlings in 1997. Began production of vegetables on rented land in 2003, lettuce exported to Taipei. Purchased land outside of Dalat and began full production in October 2006. Farm has modern packaging facilities. Sale of vegetables to local and export markets. EurepGAP certification in August 2005. In process of obtaining organic certification from Naturland of Germany.	Vegetables, Fruit	Dalat, Lam Dong Province	Main farm of 15 ha with 6 ha in production. Working to get EurepGAP certification for 7 other farmers in Dalat so their vegetables can be purchased and processed at Organik.
Organic Tea Farming Project Partnership: International Global Change Institute (IGCI), MARD and TUAF Source: (IGCI 2006; IGCI 2007)*	Project funded by the Asia Development Assistance Facility of NZAID from 2002-2006. Objectives: (1) work with MARD to develop national organic standards; and (2) work with the Mountainous Resources and Environment Centre (MREC) at Thai Nguyen University of Agriculture and	Tea	Thai Nguyen Province	Initial focus on two communes expanded to include other partners (see Ecolink below). Total of 225 farmers trained in organic methods and 69

	Forestry (TUAF) to develop organic production systems.			aiming for certification.
Ecolink Private Company Source: (Ecolink 2008; IGCI 2007; Luu Minh Ngoc 2006)*	Founded in 2003 with aim of promoting sustainable livelihoods for small-scale tea producers through improved market access. Developing products for local and export markets. Certified by ACET of Italy and ACT of Thailand.	Tea	Thai Nguyen City, Thai Nguyen Province and Bac Ha District, Lao Cai Province	18 farmers in Thai Nguyen, 286 farmers in Lao Cai.
Tradin Organic Private Company (Netherlands) Source: (Tradin Organic 2008)	Importer of organic foods to Europe, North America and Japan. Started joint venture with local company Vinh Phuc Co. in 2000 to source organic products. Certified according to EU, USDA National Organic Program (NOP) and Japanese Agricultural Standards (JAS).	Cashew, Pineapple, Mango and Passion fruit	Southern Vietnam	Unknown number of farmers
Moonflower Private Company Source: (Moonflower 2007)	Started in 2004 to commercialise essential oils produced in Vietnam. Projects include some reforestation and all production is done according to organic standards. Local supplier for sister company in Belgium. Certified to NOP and EC standards for all stages of production and processing.	Spices and Essential Oils	Yen Bai, Tuyen Quang, Lang Son, Nghe An, Long An, Bin Phuoc, Lam Dong, and Dac Nong Provinces	Unknown
Natural-Pro Private company Source: (Natural-Pro 2008)	A Vietnamese private company selling essential oils with certification from NOP and Naturland.	Essential Oils	Unknown	Unknown
Organic Shrimp Partnership: Ministry of Fisheries, SIPPO and private growers. Source: (Camillo 2004)*	Organic aquaculture combined with the conservation of mangroves. Project started in 1999, with certification provided by Naturland. The main markets are Europe.	Black Tiger Shrimp	Ca Mau Province, Mekong Delta	Around 850-1,200 farmers. Area of around 6,000 ha
Organic Fish Aquaculture Partnership: An Giang Fisheries Association, Binca Seafood and GTZ Source: (Finkel 2006; Viet Nam News 2006c)	Pilot project started in 2004, with 70 tons in 2005 and 400 tons in 2006 being exported to Europe. Certification provided by Naturland of Germany. Farmers are earning 15 percent more than conventional producers. Has led to a spin-off project to produce organic rice as a component of fish feed.	Pangasius Fish (Catfish)	An Giang Province, Mekong Delta	Production on 3 farms

Organic Agriculture Project Partnership: Agricultural Development Denmark Asia (ADDA) and the Vietnamese Farmers Union (VNFU) Source: (ADDA 2007; Viet Nam News 2006a; Viet Nam News 2007b)*	Project running from 2004-2010 to train farmers on organic production techniques and to develop local markets for organic crops. Certification will be sort under the Vietnamese national organic standards once they are operational. The project will also explore export market opportunities, particularly to other countries in the region. Some interest exists from Europe for the Litchis so these may be exported with EU organic certification.	Vegetables, Oranges, Litchis, Rice and Freshwater Fish (Carp and Tilapia)	Vegetables in Bac Ninh, Vinh Phuc and Lao Cai Provinces. Oranges in Tuyen Quang, Litchis in Bac Giang and Fish in Hai Phong Provinces	A total of 117 farmers are participating in the project, approximately 20 farmers in each province.
Fresh Foods Private Company Source: interview*	New company opening its first shop in Hanoi in January 2008. They plan to carry a range of organic products.	Vegetables, Fruit	Hanoi	Sourcing from the ADDA organic project (see above)
Organic Garden at the Vietnam Friendship Village Non-Profit Organization Source: (Berlow 2008; Waltz 2006)	Organic gardening project located on the grounds of a treatment centre for children and war veterans affected by Agent Orange since 2004. Products feed the residents and some sold in local markets.	Fruit, Vegetables, Livestock and Fish	Ha Tay Province, Northern Vietnam	Around 200 residents and staff members. Garden size is approximately 0.5 ha
Vien Phu Organic Fragrant Rice Private Company Source: (Vien Phu 2003)	Focussing on the production, processing and marketing of organic rice since 1999. Selling domestically, looking to export. Certifier is not listed.	Rice	Thuan An District, Binh Duong Province	Unknown
Organic Rice Source: (Viet Nam News 2003)	News article mentioning organic or 'clean' rice being grown in the Mekong Delta. Unclear whether this is certified organic.	Rice	Tien Giang Province, Mekong Delta	105 farmers on 115 ha
Organic Coffee Source: (Willer and Yussefi 2006)	Reference is made to Vietnam as a producer of organic coffee in the IFOAM report.	Coffee	Central Highlands	Unknown
Organic Cacao Helvetas Vietnam Source: interview*	Potential project to develop organic cacao production for export to Europe.	Cacao	Southern Vietnam	Still in the planning stage
Organic Bitter Tea Helvetas Vietnam Source: (den Braber and Hoang 2007)	Study conducted for the Cao Bang Bitter Tea Company to assess potential for converting to some organic production. Concluded that there are few technical barriers and recommended conversion to organic in one commune.	Bitter Tea (*Ilex kaushue*)	Cao Bang Province	Feasibility study conducted

* Information was also gathered through interviews.